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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,519	06/27/2000	Vivian Wanda Ryan	16-2	4938

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EXAMINER

GRAYBILL, DAVID E

ART UNIT PAPER NUMBER

2827

DATE MAILED: 06/18/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/604,519

Applicant(s)

RYAN ET AL.

Examiner

David E Graybill

Art Unit

2827

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5-8 and 10-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-8 and 10-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2-3-3 has been entered.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various

claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary.

Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 2, 5-8 and 10-12 are rejected under 35 U.S.C. 102(b) as anticipated by Tajima (5726491) or, in the alternative, under 35 U.S.C. 103(a) as obvious over the combination of Tajima (5726491) and Iijima (5563445).

At column 5, line 17 to column 7, line 39, Tajima teaches the following:

1. An integrated circuit comprising: a substrate 1 having interconnects 5 formed by an internal metallization layer and interconnecting integrated circuit devices; a plurality of bond pads 22 formed above the substrate; and a first conductive trace 21 or 23 formed by the internal metallization layer at an outer region of the substrate and coupled to at least two of the plurality of bond pads, the first conductive trace and at least two bond pads electrically isolated from the interconnects.

2. The integrated circuit of 1 wherein the first isolated conductive trace surrounds the plurality of bond pads.
5. The integrated circuit of 1 wherein the first isolated conductive trace comprises at least two separate first isolated conductive traces 21.
6. The integrated circuit according to 5 wherein the at least two separate first isolated conductive traces have a varying height relative to an upper surface of the substrate.
7. The integrated circuit according to 1 wherein the first isolated conductive trace is formed at the periphery of the integrated circuit.
8. The integrated circuit of 1 wherein the first isolated conductive trace comprises at least two separate isolated conductive traces, each of the separate isolated conductive traces coupled to at least two of the plurality of bond pads.
10. An integrated circuit comprising: a substrate having interconnects for formed by an internal metallization layer and interconnecting integrated circuit devices; a plurality of bond pads; and a conductive tester runner 21 or 23 formed by the internal metallization layer and around the plurality of bond pads formed above the substrate, and electrically coupled to at least two of the plurality of bond pads, the conductive tester

runner and at least two bond pads electrically isolated from the interconnects.

11. The integrated circuit of 10 further comprising a plurality of isolated conductive tester runners 21.

12. The integrated circuit according to 11 wherein at least two of the plurality of the isolated conductive tester runners having a varying height relative to an upper surface of the substrate.

To further clarify the teaching of interconnects 5 and conductive trace 21 or 23 formed by a metallization layer, it is noted that, at column 5, lines 44-46, Tajima teaches that the bumps (conductive trace 21 or 22) are formed "when the bumps [interconnects 5] are formed on the electrode pads."

To further clarify the teaching that the metallization layer is an internal metallization layer, it is noted that the metallization layer is internal of the chip edge perimeter.

To further clarify the teaching of the first conductive trace and at least two bond pads electrically isolated from the interconnects, it is noted that there is no teaching that the pads and interconnects are electrically connected. Furthermore, Tajima teaches "dummy pads" and "dummy bumps," and dummy pads and dummy bumps are electrically isolated from interconnects.

To further clarify the teaching wherein the at least two separate first isolated conductive traces have a varying height relative to an upper surface of the substrate, it is noted that the traces have a rounded upper surface having a varying height relative to an upper surface of the substrate.

However, because Tajima does not appear to explicitly teach the first conductive trace and at least two bond pads electrically isolated from the interconnects, in the alternative, the claims are rejected over the combination of Tajima and Iijima. Specifically, at column 5, line 16 to column 6, line 2, Iijima teaches dummy pads electrically isolated from interconnects {"internal circuits"}. Moreover, it would have been obvious to combine the product of Iijima with the product of Tajima because, as taught by Iijima, it would prevent the bumps from causing a malfunction of the integrated circuit.

Claims 3 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tajima or Tajima and Iijima as applied to claims 1 and 10 or in the alternative, over the combination of Tajima and Lee (5811874) or Tajima, Iijima and Lee (5811874).

Tajima does not appear to explicitly teach an integrated circuit wherein a first isolated conductive trace and the isolated conductive tester runner has a chamfered region. Notwithstanding, it would have been an obvious matter of design

choice bounded by well known manufacturing constraints and ascertainable by routine experimentation and optimization to choose this particular shape because applicant has not disclosed that the shape is for a particular unobvious purpose, produces an unexpected result, or is otherwise critical, and it appears prima facie that the product would possess utility using another shape. Indeed, it has been held that limitations directed to shape are prima facie obvious absent a disclosure that the limitations are for a particular unobvious purpose, produce an unexpected result, or are otherwise critical. See, for example, *In re Rose*, 220 F.2d 459, 105 USPQ 237 (CCPA 1955); *In re Rinehart*, 531 F.2d 1048, 189 USPQ 143 (CCPA 1976); *Gardner v. TEC Systems, Inc.*, 725 F.2d 1338, 220 USPQ 777 (Fed. Cir. 1984), cert. denied, 469 U.S. 830, 225 USPQ 232 (1984); *In re Dailey*, 357 F.2d 669, 149 USPQ 47 (CCPA 1966).

In any case, in the alternative, at column 5, lines 8-13 and 50-53, Lee teaches an integrated circuit wherein a first conductive trace 112 has a chamfered region. Moreover, it would have been obvious to combine the product of Lee with the product of the applied prior art because it would reduce corner shear stress.

Applicant's remarks filed 2-3-3 have been fully considered and are adequately addressed in the rejection supra.

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Any telephone inquiry of a general nature or relating to the status (MPEP 203.08) of this application or proceeding should be directed to Group 2800 Customer Service whose telephone number is 703-306-3329.

Any telephone inquiry concerning this communication or earlier communications from the examiner should be directed to David E. Graybill at (703) 308-2947. Regular office hours: Monday through Friday, 8:30 a.m. to 6:00 p.m.

The fax phone number for group 2800 is 703/308-7722.



David E. Graybill
Primary Examiner
Art Unit 2827

D.G.
15-Jun-03